

Marsdenia Taylori, sp. nov. Volubilis, caule flagelliforme, foliis ovali-ovatis acutis uninerviis glabris; inflorescentia parva axillari breviter dichotome ramosa, floribus pluribus dense glomeratis; pedicellis brevibus, calyce breviter campanulato sparse pilosulo, segmentis late ovalibus vel ovatis ciliolatis, glandulis parvis singulis linearibus interpositis; corolla campanulata, lobis brevibus rotundatis emarginatis, tubo pilis albidis erectis ore instructis, et infra setis numerosis reflexis cum staminibus alternantibus indutis; coronæ squamis antheris adnatis, parte tantum superiori libera membranacea anguste triangulari, ab antheræ appendice latiori superata; pollinibus filiformibus, caudiculis latis membranaceis.

Hab. Rabai Hills, East Tropical Africa, July–Sept. 1885, *W. F. Taylor*.

The leaves are 4 in. long by scarcely 2 in. broad, and have an entire obtuse base; the petioles $\frac{3}{8}$ in. long. The whole inflorescence is only $\frac{1}{2}$ – $\frac{3}{4}$ in. in length, the peduncles being 3–4 lines, and the closely crowded pedicels borne on its short branches, 1–1½ lines. The calyx-segments are $\frac{3}{4}$ –1 line long; the corolla is 2 lines long, its lobes only $\frac{2}{3}$ line; the mouth of the tube is filled with a ring of stiffish hairs, while the interior of the tube at the level of the stamens bears tufts of downwardly pointing shorter but otherwise similar hairs. The corona-scales, except for the short (less than $\frac{1}{2}$ line) acute tip, are adnate to the backs of the anthers, the broader triangular appendage of which overtops them; the stamens are 1 line long, with coherent filaments.

Is near the Indo-Malayan and Chinese species *M. tinctoria* Br., but is distinguished by its inflorescence, larger flowers, and leaves with a marked obtusely pointed base.

EXPLANATION OF PLATE 356 B.—*Baseonema Gregorii*. Fig. 1. Flower, $\times 2$. 2. Flower from which petals have been cut away, $\times 4$. 3. Pollen-carrier, $\times 4$. 4. Pollen tetrad.

LICHENES ANTILLARUM A W. R. ELLIOTT COLLECTI.

EXPONIT EDV. A. WAINIO.

(Continued from p. 72.)

Trib. 10. LECIDEÆ.

1. CLADONIA.

1. *C. FLOERKEANA* (Fr.) Sommerf. **C. BACILLARIS* Nyl. α . *CLAVATA* (Ach.) Wain. Mon. Clad. i. 92. Ad truncos putridos in monte St. Andrews (2000 ped.) in St. Vincent (n. 82, pr. p.).

2. *C. DIDYMA* (Fée) Wain. α . *MUSCIGENA* (Nyl.) Wain. Mon. Clad. i. 141. Ad terram humosam in rupe in Roseau Valley (n. 111) et in cacumine montis Morne Diablotin (4500–4700 ped. s. m.) in Dominica (n. 701).

f. *polydactyloides* (Müll. Arg.) Wain. l. c. 142. Ad terram humosam in rupe in monte Morne Anglais (3750 ped. s. m.) in

Dominica (n. 496) et ad lignum putridum in monte St. Andrews (2000 ped. s. m.) in St. Vincent. Sterilis.

3. *C. FIMBRIATA* (L.) Fr. var. *BORBONICA* (Del.) Wain. Mon. Clad. ii. 343, 344. Ad lignum putridum in Layon Park (800–1000 ped. s. m.), n. 112, et in Prince Empert Town in Dominica et in monte St. Andrews (2000 ped. s. m.) in St. Vincent (n. 82, pr. p.).

2. LECIDEA.

1. *L. (BACIDIA) MEDIALIS* Tuck.; Wain. Étud. Brés. ii. 17. Ad corticem arborum in Kingstown (n. 253) et Coles Hill in St. Vincent.

2. *L. (BILIMBIA) ANDITA* Nyl. Fl. 1864, 620; Wain. Étud. Brés. ii. 24. *L. andesita* Nyl. in Hue, Lich. Exot. (1892) 197. In rupe ad Bath Estate (n. 134 et 150) et in Souffrière (n. 147) in Dominica. Hypothecium fulvescens aut fulvescenti-pallidum aut testaceo-rufescens.

f. *pluriseptata* Wain. Sporæ demum 8–9-septatæ. Supra rupem ad Fort Charlotte in St. Vincent. Apothecia demum convexa. Hypothecium fulvescens aut rufescenti-fulvescens. Hymenium iodo intense cærulescens, dein partim violacee obscuratum. Sporæ fusiformes, altero apice angustiore, apicibus acutis aut obtusiusculis, long. 0·023–0·030, crass. 0·005–0·006 millim.

Var. *SUBMEDIALIS* Wain. Corticola. Sporæ fusiformes aut oblongo-fusiformes, altero apice rotundato et altero angustato et acutiusculo, long. 0·023–0·013, crass. 0·006–0·003 millim., 5–8-septatæ. Hymenium iodo intense persistenterque cærulescens. Hypothecium pallidum aut fulvescens, KHO non reagens. Apothecia plana aut demum convexiuscula. Thallus rimoso-areolatus, areolis granulato-inæqualibus. Intermedia est inter *L. Anditam* et *L. mediatem*, at reactione hymenii et forma sporarum magis cum priore congruens. Ad corticem arboris in Kingstown in St. Vincent (n. 252, pr. p., cum *L. mediali*).

3. *L. (BILIMBIA) dominicana*, sp. n. Thallus tenuis, æqualis, subcontinuus, glauco-virescens. Apothecia adpressa, 0·6–0·3 millim. lata, disco plano planiusculove, fusco aut rufo, nudo, margine tenui, persistente, albido, lævigato. Hypothecium rubescenti- aut fulvescenti-rufescens, KHO non reagens. Hymenium arcte cohærens, circ. 0·070–0·085 millim. crassum, iodo intense persistenter cærulescens. Epithecium passim pallidum. Paraphyses numerosæ, capillares, simplices. Ascii clavati, circ. 0·012 millim. crassi, membrana sat tenui. Sporæ 8næ, aciculari-fusiformes, altero apice rotundato obtusove, altero attenuato, aut apicibus ambobus attenuatis, long. 0·014–0·024, crass. 0·0025–0·0035 millim., decolores, 3–7-septatæ, haud constrictæ. Ad folia arborum in Dominica (cum n. 517). Hypothallus indistinctus. Excipulum ex hyphis radiantibus formatum conglutinatis, cellulis oblongis aut ellipsoideis, mediocribus, parenchymaticis, pallidum, basi partim fuscescens, KHO non reagens. Habitu *Pilocarpum leucoblepharum* in memoriam revocat.

4. *L. (BILIMBIA) mollissæformis*, sp. n. Thallus evanescens,

indistinctus (infra apothecia gonidiis paucis protococcoideis instructus). Apothecia adpressa, 0·3-0·15 millim. lata, depresso-convexa, immarginata, testaceo-pallida, ad ambitum pallidiora. Excipulum basi cyanescens. Hypothecium superius decoloratum, inferius pallido-olivaceum, KHO non reagens. Hymenium arete cohærens, circ. 0·045 millim. crassum, iodo intense persistenter cærulescens. Epithecium decoloratum. Paraphyses parcissime evolutæ (ad latera hymenii parce ramoso-connexæ: in acido acetico visæ), in hymenio ascis sterilibus compensatæ. Asci clavato-ventricosi. Sporæ 8næ, elongatæ, apicibus obtusis aut rotundatis, long. 0·018-0·021, crass. 0·003-0·004 millim., decolores, 6-7-septatæ, haud aut parum constrictæ. Ad folia arboris in Bonhomme Woods in St. Vincent (cum n. 351). Excipulum minute pseudo-parenchymaticum. Apothecia ceraceo-semipellucida. Colore hypothecii a *Lecidea fuscata* (Müll. Arg. Lich. Beitr. n. 298) et *Lecidea rufula* (Müll. Arg. Lich. Beitr. n. 299) differt.

5. **L. (BILIMBIA) nana**, sp. n. Thallus crustaceus, tenuis, obscure cinereo-glaucescens, sorediis minutis rotundatis glaucescenti-albidis adpersus, subcontinuus, sat æqualis, hypothallum fusco-nigricantem obducens. Apothecia increbra, 0·3-0·25 millim. lata, adpressa, disco planiusculo aut leviter convexusculo, umbrino aut umbrino-testaceo, nudo, margine nigricante, tenuissimo evanescente, integro. Excipulum parte superiore albidum. Hypothecium fusco-nigricans, KHO non reagens. Hymenium circ. 0·035 millim. crassum, totum decoloratum, iodo persistenter cærulescens. Paraphyses numerosæ, filiformes, tenues, simplices, apice haud incrassatæ. Asci clavati, circ. 0·008 millim. crassi, membrana tenui. Sporæ 8næ, decolores, fusiformes aut ovoideo-fusifformes, apicibus obtusis, long. 0·009-0·007, crass. 0·003-0·0025 millim., rectæ, 3-septatæ. Supra Pyrenulam vetustam ad corticem arboris in Richmond Valley in St. Vincent (n. 273). Affinis est *L. lividofuscescenti* Nyl., at multo minor. Excipulum ex hyphis radiantibus conglutinatis formatum, cavitate cellularum angusta.

6. **L. (BILIMBIA) variabilis**, sp. n. Thallus crustaceus, crassitudine mediocris (circ. 0·5 millim. aut tenuior), verruculosus et rugulosus rugosusque, subcontinuus aut areolato-diffractus, sordide glaucescens aut cinereo-glaucescens aut rarius glaucescenti-albidus, hypothallo albedo parum evoluto. Apothecia 0·7-0·3 millim. lata, adpressa, numerosa crebraque, disco planiusculo aut leviter convexusculo, fusco-nigricante aut pallescente (in eodem specimine), nudo, margine tenui, integro, persistente, nigricante aut rarissime pallescente (in apotheciis pallidis quoque vulgo nigricante aut rarissime pr. p. pallescente). Excipulum vulgo fusco-fulgineum aut violaceofuscens, centro demum deficiens. Hypothecium dilute fuscens aut fulvo-rufescens, tenue, KHO non reagens. Hymenium circ. 0·050-0·060 millim. crassum, parte superiore decoloratum aut ambitum versus dilutissime subfuscens, iodo intense cærulescens et demum partim violascenti-obscuratum. Paraphyses sat arcte aut sat laxe cohærentes, 0·0015 millim. crassæ, apice haud aut levissime incrassatæ. Asci clavati. Sporæ 8næ, decolores, fusi-

formes aut oblongæ aut elongato-fusiformes, apicibus obtusis, rectæ, 3-septatæ, long. 0·019–0·011, crass. 0·0035–0·0025 millim. Ad cementum et lapides in Fort Charlotte in Kingstown in St. Vincent (n. 258, etc.). Affinis est *L. phaomela* Nyl. Prodr. Nov. Gran. ed. 2, 344; Stizenb. Lec. Sabul. 69, at thallo fere esorediato, crassiore, hymenio crassiore, iodo intense cærulescente ab ea differens.

7. *L. (BILIMBIA) chlarodes*, sp. n. Thallus crustaceus, tenuis, continuus, minute subverruculosus aut sat lævigatus, glaucescenti-stramineus, KHO leviter lutescens, CaCl_2O_2 non reagens, esorediatus, hypothallo albo parum evoluti. Apothecia adpressa, elevata, 0·8–1·3 millim. lata, pro parte crebra, pro parte increbra, disco plano, nigro aut cæsiolivido (in eodem specimine), margine crassiusculo, integro aut leviter flexuoso, discum superante, albido, persistente. Excipulum parte exteriori albidum aërem inter hyphas radiantes continens, KHO lutescens, intus circa hymenium in margine fusco-nigrum. Hypothecium fusco-nigrum, KHO non reagens. Hymenium circ. 0·070–0·080 millim. crassum, parte superiore decoloratum aut pallido-livescens, iodo persistenter cærulescens. Paraphyses numerosæ, 0·0015 millim. crassæ, apice haud incrassatæ, sat parce ramoso-connexæ. Asci clavati. Sporæ 8næ, decolores, oblongæ, apicibus obtusis, rectæ, 3-septatæ, long. 0·009–0·011, crass. 0·003 millim. Ad corticem arboris in cacumine montis Morne Couronne (2400 ped. s. m.) in Dominica (n. 166). Apothecia nigra habitu fere sicut in *Lecanora chlarona*, at gonidiis destituta. Excipulum ex hyphis radiantibus formatum, modice pachydermaticis, aëre disjunctis, at apice conglutinatis et stratum corticale excipulum obducens formantibus. Gonidia protococcoidea. Cum *Bombyliosporis* et *Lecanactideis* hæc species analogias ostendit.

8. *L. (LOPADIUM) amauro*, sp. n. Thallus crustaceus, tenuis aut mediocris, continuus, sat lævigatus aut verruculoso- et ruguloso-inæqualis, glaucescenti-albidus aut sordide glaucescens, esorediatus, KHO non reagens, hypothallo cæruleo-nigricante passim interdum evoluti. Apothecia adpressa, elevata, 1–0·5 millim. lata, disco plano aut raro demum convexiusculo, nigro, nudo, opaco, margine sat crasso, cinerascete aut cyanescenti-cinerascete aut superne pr. p. nigricante, persistente, integro, discum vulgo superante. Excipulum extus albidum, in margine intus cæruleo-smaragdulum aut cyanescenti-fuliginium. Hypothecium superne anguste dilute sordide violascens aut sordide olivaceum, inferne dilute cyanescens aut cæruleo-smaragdulum et parte infima (excipulari) albidum, KHO non reagens. Hymenium circ. 0·080–0·090 millim. crassum, parte superiore smaragdulo-cæruleum aut olivaceum, laxè cohærens, KHO non reagens, iodo persistenter cærulescens. Paraphyses numerosissimæ, 0·0015 millim. crassæ, apice haud incrassatæ, sat parce ramoso-connexæ. Sporæ solitariae, decolores aut demum sordide pallidæ, oblongæ, apicibus rotundatis aut rarius obtusis, rectæ, murales, cellulis numerosissimis, halone nullo indutæ, long. 0·070–0·100 millim., crass. 0·019–0·028 millim. Ad corticem arborum in Roseau Valley in Dominica (n. 113 et 120).

L. pezizoidea (Ach.) affinis et apotheciis eam in memoriam revocans, at apotheciis minus elevatis et margine pallidiore instructis et colore epithecii cet. ab ea bene differens. Excipulum hyphis radiantibus, conglutinatis, cellulis oblongis, sat angustis.

9. **L. (LOPADIUM) Elliottii**, sp. n. Thallus crustaceus, tenuis vel tenuissimus, sat continuus, sat æqualis, glauco-virescens. Apothecia adpressa, 0.8-0.4 millim. lata, disco primum planiusculo, demum convexo, testaceo-pallido aut sordide testaceo, epruinoso, margine sat tenui, discum pallidiore, primum discum æquante, demum excluso aut subsistente. Excipulum pallidum, minute parenchymaticum, extus lævigatum. Hypothecium rufescenti-rubescens aut fulvescenti-rufescens, KHO non reagens. Hymenium 0.070-0.100 millim. crassum, totum decoloratum, iodo intense persistenter cærulescens. Paraphyses parce evolutæ, tenuissimæ, increbre ramoso-connexæ (in H_2SO_4 visæ). Sporæ 8næ aut 4næ aut abortu solitariæ, decolores, fusiformes aut fusiformi-elongatæ, altero apice vulgo angustiore, apicibus obtusis aut altero apice rotundato, halone indutæ aut destitutæ, submurales, septis transversalibus 7-9, septis longitudinalibus paucissimis, vulgo solum 10-12-cellulosæ, long. 0.026-0.032, crass. 0.005-0.009 (raro 0.011) millim. Ad folia arborum (duarum specierum) in Bonhomme Woods in St. Vincent. *L. perpallidam* Nyl. in memoriam revocat, sed minor. Stratum hypothallinum cyanescens solum infra apothecia evolutum. Gonidia protococcoidea (forsan pleurococcoidea), simplicia, membrana sat tenui. Asci clavati, membrana tenui.

10. **L. (LOPADIUM) rubicundula**, sp. n. Thallus crustaceus, tenuis, maculas sæpe rotundatas formans, leviter inæqualis aut sat æqualis, glaucescenti-albidus, interdum demum desquamescens. Apothecia adpressa, 0.4-0.2 millim. lata, disco plano, rufescenti-rubicundo, epruinoso, margine mediocri aut sat tenui, carneo-albido, discum æquante, persistente. Excipulum impellucidum et aërem inter hyphas continens, irregulariter crebre contextum, gonidiis destitutum, KHO lutescens et dein rubescens (crystalla acicularia brevia rubra formans). Hypothecium rufescenti-pallidum aut testaceum. Hymenium 0.060 millim. crassum, totum decoloratum aut epithecio passim pallido, iodo intense persistenter cærulescens. Paraphyses parum evolutæ, fere diffusæ, ramoso-connexæ. Sporæ solitariæ, decolores, ellipsoideæ, apicibus rotundatis, halone nullo aut tenui indutæ, murales, cellulis numerosis, long. 0.034-0.038, crass. 0.016-0.018 millim. Ad folia filicis arboreæ in Morne Cochon (1200 ped. s. m.) in St. Vincent. Gonidia protococcoidea.

11. **L. (LOPADIUM) Leprieurii** (Mont.) Wain. *Sporopodium Leprieurii* Mont. Ann. Sc. Nat. 3 sér. Bot. t. xvi. p. 54, tab. 16, fig. 1 (haud bona). *Lecidea reveniens* Nyl. Enum. Gén. Lich. 123. *Lopadium Leprieurii* Müll. Arg. Lich. Beitr. (1890), n. 1524. Ad folium in Bonhomme Woods in St. Vincent. Huc etiam *Phlyctis arachnoidea* Krempelh. Lich. Becc. 16 et *Lopadium arachnoideum* Müll. Arg. Lich. Beitr. n. 1525 pertinere videntur. Saltem planta nostra inter *L. Leprieurii* et *L. arachnoideum* Müll. Arg. intermedia est. Forsan etiam *L. stephanella* Nyl. Fl. 1866, 291, ad eandem

speciem pertinet, vix nisi thallo granuloso et hypothallo fusco ab ea differens. Plantam ab Elliott lectam hic describimus. Thallus tenuissimus, byssoideus vel arachnoideus, cinerascens. Apothecia adpressa, 0·5–0·3 millim. lata, disco plano, nigro aut fusco-nigricante, epruinoso, opaco, margine cinereo aut cinereo-albido, tenuissimo, dein mox excluso, pilis obducto. Excipulum intus (etiam in margine) cyanescens, parte exteriori late albidum, parenchymaticum, extus pilosum, pilis 0·005–0·008 millim. crassis, membrana incrassata, cellulis oblongis, sat latis. Hypothecium cæruleo-smaragdulum et fuscescenti-smaragdulum, KHO partim olivaceum. Hymenium 0·110–0·130 millim. crassum, iodo intense persistenter cærulescens. Epithecium pallidum aut olivaceum, KHO non reagens. Paraphyses haud numerosæ, increbræ, ramoso-connexæ. Sporæ singulæ aut raro binæ, decolores, oblongæ aut elongatæ, apicibus vulgo rotundatis, halone nullo indutæ, long. 0·075–0·112, crass. 0·019–0·020 millim., murales, cellulis numerosissimis, in seriebus transversalibus numerosissimis. Hypothallus cæruleo-nigricans infra excipulum evolutus. Thallus in specimine ab Elliott lecto male evolutus et algis variis fortuito immixtus, laxè contextus, hyphis circ. 0·004–0·002 millim. crassis. Excipulo parenchymatico bene evolutu, solum extus piloso, a *Pilocarpeis* Wain. Étud. Brés. ii. 88 differt.

12. **L. (LOPADIUM) subpilosa**, sp. n. Thallus crustaceus, tenuissimus, parum evolutus. Apothecia adpressa, 0·3–0·2 millim. lata, disco plano, nigro, epruinoso, opaco, margine cinereo aut cinereo-albido, tenuissimo, subpersistente aut demum excluso. Excipulum grosse parenchymaticum, extus pilis brevissimis, 0·002–0·003 millim. crassis instructum, albidum et circa hymenium cyanescens. Hypothecium superne fuscescenti-nigricans, inferne cyanescens, KHO sordide violascens. Hymenium 0·080–0·070 millim. crassum, iodo intense persistenter cærulescens. Epithecium fusco-cyanescens aut olivaceum. Paraphyses sat parce evolutæ, apice haud incrassatæ, pr. p. haud ramosæ, pr. p. valde increbre ramoso-connexæ ramosæque. Sporæ solitariæ, decolores, oblongæ, apicibus rotundatis, halone nullo indutæ, long. 0·060–0·070, crass. 0·016–0·022 millim., murales, cellulis numerosissimis. Ad folia arboris in Dominica.

13. **L. (BOMEYLIOSPORA) DOMINGENSIS** (Pers.) Nyl.; Wain. Étud. Brés. ii. 33. Ad corticem arborum in Richmond Valley (n. 242) et ad Bow-wood (1000 ped. s. m., n. 130) in St. Vincent.

14. **L. (CATILLARIA) LÆTIOR** Nyl. Prodr. Nov. Granat. ed. 2 (1863), 343 (*Patellaria latior* Müll. Arg. Lich. Beitr. 1882, n. 432). Thallus crustaceus, sat tenuis, verruculoso-granulosus, cinereo-virescens vel sordide glauco-virescens. Apothecia adpressa, 1·2–0·7 millim. lata, pallida aut testaceo-pallida, plana, margine mediocri, discum æquante disco concolore aut paullo pallidiore, demum excluso. Excipulum, hypothecium et hymenium dilute pallidum. Paraphyses arcte cohærentes. Hymenium 0·060–0·070 millim. crassum, iodo cærulescens et demum obscuratum. Sporæ 8næ, fusiformi-oblongæ aut fusiformi-ellipsoideæ, apicibus obtusis, rectæ, 1-septatæ aut primo simplices, long. 0·007–0·011, crass. 0·004–0·005

millim. *Gonidia* protococcoidea. Ad lignum putridum in Richmond Peak in St. Vincent (n. 262).

15. *L. (PSORA) BREVIUSCULA* Nyl.; Wain. *l. c.* 45. Ad corticem arboris in Bow-wood (800 ped. s. m.) in St. Vincent (n. 135). Excipulum violaceo-fuscescenti-fuliginium, KHO non reagens, inferne rhiziniis obductum aut pr. p. rhiziniis destitutum. Hypothecium pallidum vel sordide pallidum vel parte superiore dilute fuscescenti-pallidum, KHO non reagens. Sporæ long. 0·005–0·006, crass. 0·0025 millim.

16. *L. (PSORA) CORALLINA* Eschw.; Wain. *l. c.* 48. Ad corticem arboris in Richmond Peak (800 ped. s. m.) in St. Vincent (n. 264). Verruculæ thalli in isidia subteretia accrescentes. Hypothecium fulvescens, KHO intensius rufescens. Sporæ long. 0·009–0·011, crass. 0·002–0·0025 millim.

Var. *SCHIZOPHYLLODES* Wain. Verruculæ thalli in squamulas applanatas, 0·1 millim. latas accrescentes. Hypothallus nigricans. Hypothecium parte superiore fulvescenti-rufescens, parte inferiore rufescens, KHO non reagens. Sporæ long. 0·007–0·011, crass. 0·002 millim., fusiformi-oblongæ. Ad corticem arboris in Richmond Peak (1000–2000 ped. s. m.) in St. Vincent (n. 261). Thallo a *L. corallina* differt et analoga est *L. furfuraceæ* f. *schizophyllæ* Wain. *l. c.* 47.

17. *L. (BIATORA) ochrothelia*, sp. n. Thallus crustaceus, tenuissimus, albido-glaucescens, continuus, æqualis. Apothecia adpressa, 0·7–0·4 millim. lata, convexa, immarginata, testaceo-pallida. Excipulum grosse parenchymaticum, pallidum, basi infima cyanescens. Hypothecium pallidum. Hymenium molle, ab hypothecio haud distincte limitatum, iodo haud reagens. Epithecium pallidum aut passim testaceum, tenue, KHO non reagens. Paraphyses molles, in gelatinam fere dissolutæ, parum distinctæ. Asci clavati, membrana tenui, molli. Sporæ abortu paucæ, ellipsoideæ et long. 0·010 et crass. 0·007 millim. aut globosæ vel subglobosæ et diam. 0·007–0·005 millim., decolores, simplices. Ad folia arboris in Dominica (cum n. 517) obvenit, at solum parcissime lecta. Epithecium fortuito gonidia protococcoidea continet. Thallus gonidia protococcoidea continens. Planta insignis, et notis datis facile cognita, quamquam nimis parce lecta. Ab affini *L. Trailiana* Müll. Arg. Lich. Epiphyll. Spruc. 324, bene differt.

18. *L. (BIATORA) PIPERIS* (Spreng.) Nyl. f. *ERYTHROPLACA* (Fée) Krempelh.; Wain. *l. c.* 53. Ad corticem arborum in Roseau Valley (n. 127), Morne Couronne (n. 168), et Basin Will (n. 354) in Dominica.

f. *denigrata* Tuck. in Wright, Lich. Cub. n. 192. Apothecia disco pallescente, margine nigricante. Thallus variabilis, materia coccinea plus minusve abundante, aut superficie glaucescente. Ad corticem arboris in Morne Anglais in Dominica (n. 522). Etiam ad Rio de Janeiro in Brasilia a me lecta.

f. *canorufescens* Wain. Habitu vix differens a *L. canorubella* (Nyl.) Wain. Étud. Brés. ii. 51, at thallo passim parcissime materiam coccineam continens et sporis crassioribus. Thallus glau-

cescens, intus vulgo albidus et materia coccinea destitutus, at passim parcellissime etiam materiam coccineam continens. Apothecia disco testaceo-rufescente aut griseo-rufescente aut rufo-fuscescente, plano aut demum convexo, margine cinereo. Excipulum parte interiore fusco-nigrum, parte exteriori pallidum. Sporæ long 0·011–0·013, crass. 0·007–0·009 millim. Ad corticem arborum in Roseau Valley (n. 134) in Dominica et ad Government House (900 ped. s. m., n. 127) et Kingstown (n. 256) in St. Vincent.

19. **L. (BIATORA) phæopsis**, sp. n. Thallus crustaceus, sat tenuis, rimoso-diffractus, superficie leviter verruculoso-inæquali, partim fere lævigata, sordide coloratus aut sordide albicans, KHO non reagens. Apothecia 0·6–1·5 millim. lata, adpressa, disco convexiusculo aut rarius plano aut demum convexo, fusco-nigro, sat opaco, nudo, margine griseo-fuscescente, mediocri, discum haud superante, integro, persistente aut raro demum excluso. Excipulum fusco-nigrum, parte exteriori in margine anguste albido-decoloratum et inferne subpallidum aut fuscescenti-hyalinum. Hypothecium fusco-nigrum. Hymenium 0·100 millim. crassum, parte superiore pallidum, iodo persistenter cærulescens. Asci clavati. Sporæ 8næ, monostichæ aut distichæ, decolores, simplices, ellipsoideæ et pr. p. subgloboso-ellipsoideæ, apicibus rotundatis, long. 0·010–0·012, crass. 0·005–0·008 millim. Ad corticem arborum in Morne Couronne (2000–2400 ped. s. m.) in Dominica (n. 159). Affinis *L. sanguineotæ* et *L. albofuscescenti*, a quibus sporis crassioribus et margine pallidiore differt. Paraphyses 0·0007 millim. crassæ, gelatina in KHO mollescente separata, apice haud incrassata.

20. **L. (BIATORA) arthoniopsis**, sp. n. Thallus crustaceus, subcontinuus, tenuis, sat æqualis aut passim leviter verruculoso-inæqualis, albidus. Apothecia 0·4–0·2 millim. lata, tenuia, thallum leviter aut vix superantia, plana, disco fusco-nigro aut nigricante, nudo, margine tenui aut tenuissimo, pallidiore. Hypothecium parte superiore albidum aut pallidum, parte inferiori fulvescenti-pallidum. Excipulum tenue, cartilagineum, pallidum (etiam in margine). Hymenium 0·070 millim. crassum, iodo intense cærulescens, demum obscuratum. Paraphyses simplices, laxè cohærentes, apice leviter clavato-incrassata. Epithecium sordide violaceo-fuscescenti-fuliginum, KHO olivaceum. Asci clavati, apice membrana leviter incrassata. Sporæ 8næ, simplices, decolores, ellipsoideæ aut subglobosæ, long. 0·008–0·013, crass. 0·005–0·007 millim. Ad corticem arborum in Roseau Valley in Dominica (cum n. 115). Habitu *L. obscurellam* var. *tenuiculam* Nyl. in memoriam revocat et ei affinis. Gonidia protococcoidea.

21. **L. (BIATORA) COARCTATA** (Sm.) Nyl. var. **ELACHISTA** (Ach.) Th. Fr.; Wain. *l. c.* 55. In rupe ad Bath Estate in Dominica (n. 142).

(To be continued.)